

REMARKS

Applicants respectfully request reconsideration of the present application in view of the reasons that follow.

I. Amendments and Status of the Claims

Claims 5 and 6 are requested to be amended. Because the amendments do not require additional search or examination, entry thereof after the final Office Action is respectfully requested.

Upon entry of the amendments, therefore, claims 1, 5, and 6 will be pending and subject to examination on the merits.

II. Claim Rejections – 35 U.S.C. § 103

Claims 1, 5 and 6 stand rejected under 35 U.S.C. § 103 as allegedly obvious over U.S. Patent No. 6,300,626 to Brock in view of U.S. Patent No. 6,263,087 to Miller. According to the Examiner, Brock “fails to disclose the use of a bit flipped pseudo random binary sequence,” and Miller is cited to remedy this deficiency. Applicants respectfully traverse this ground of rejection.

Brock in view of Miller does not render the claims obvious, because one of skill in the art would have no reason to create a data set and matrices for *both* a pseudo-random binary sequence (PRBS) and a bit-flipped PRBS and combining these data sets and matrices to reduce noise, as claimed. Notably, the claimed system and method create data set and matrices for both a PRBS and a bit-flipped PRBS. These data sets and matrices are combined using matrix algebra to reduce noise. Brock in view of Miller does not suggest this approach, as discussed below.

Brock does not teach or suggest the use of bit-flipping to improve the signal to noise ratio, as claimed. Generally, Brock relates to a time of flight mass spectrometer having an increased duty cycle. Brock teaches that a PRBS can be used to control the gate. However,

nothing in Brock suggests using both a both a PRBS and a bit-flipped PRBS to reduce noise, as claimed. Miller does not remedy this deficiency.

At the outset, Miller is not analogous art to Brock and, therefore, cannot be properly combined with Brock. Brock is generally directed to a time-of-flight mass spectrometer and makes no mention of noise. Specifically, Brock discloses the use of a PRBS, but it is not for the purposes of limiting noise. In fact, “it is not even necessary to construct the desired pseudorandom sequences from Hadamard difference sets.” Brock at 4:58-59. Miller, on the other hand, is directed to decoding a vector from media containing a watermark. *See* Miller, claim 1. Generally, Miller receives a vector, perform a bit coding operation on the vector, and compares a re-encoded vector with the original vector “to determine whether the original vector truly encoded a message or was simply a noise signal.” Miller, abstract; Figs. 4 & 5. Thus, there is no problem or issue in Brock that would cause one of skill in the art to turn to Miller; these references are unrelated. Accordingly, Miller is not analogous art and cannot be combined with Brock. MPEP § 2141.01(a).

Even if Miller and Brock were combined, one of skill in the art would not arrive at the claimed invention. Miller and Brock suggest, at best, that both PRBS and bit-flipped PRBS can be used in signal processing. But Miller and Brock do not suggest that both PRBS and bit-flipped PRBS should be employed and that the resulting data sets and matrices should combined using matrix algebra to reduce noise, as claimed. This combination of matrices and data sets to reduce noise is not taught or suggested by either reference even though Brock employees PRBS and Miller employs bit-flipped PRBS. Noise reduction is not a concern for Brock, and Miller employs an entirely different method for discriminating messages from noise, bit-flipped PRBS playing on a minor role in that method. Accordingly, combining Brock and Miller, as suggested by the Examiner, fails to teach or suggest the claimed invention.

Brock in view of Miller in further view of Loboda does not render obvious dependent claim 5, because Loboda does not remedy the deficiencies of Brock and Miller. Loboda is merely cited to show an “ion mobility section where an ion guide is used as a drift or mobility

section.” Accordingly, Brock in view of Miller in further view of Loboda fails to render obvious claim 5 for the same reasons Brock and Miller fail to render obvious claim 1.

For at least these reasons, Applicants respectfully request reconsideration and withdrawal of this ground of rejection.

CONCLUSION

Applicants believe that the present application is now in condition for allowance. Favorable reconsideration of the application as amended is respectfully requested.


The Examiner is invited to contact the undersigned by telephone if it is felt that a telephone interview would advance the prosecution of the present application.

The Commissioner is hereby authorized to charge any additional fees which may be required regarding this application under 37 C.F.R. §§ 1.16-1.17, or credit any overpayment, to Deposit Account No. 19-0741. Should no proper payment be enclosed herewith, as by a check being in the wrong amount, unsigned, post-dated, otherwise improper or informal or even entirely missing or a credit card payment form being unsigned, providing incorrect information resulting in a rejected credit card transaction, or even entirely missing, the Commissioner is authorized to charge the unpaid amount to Deposit Account No. 19-0741. If any extensions of time are needed for timely acceptance of papers submitted herewith, Applicants hereby petition for such extension under 37 C.F.R. §1.136 and authorizes payment of any such extensions fees to Deposit Account No. 19-0741.

Respectfully submitted,

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By



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